App]	licant:
For:	

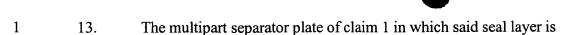
Pien et al.

MULTIPART SEPARATOR PLATE FOR AN ELECTROCHEMICAL

CELL

- 1 1. A multipart separator plate for a fuel cell comprising:
- 2 a distributor plate for directing fluid flow;
- a frame surrounding said distributor plate;
- 4 an impervious separator layer; and
- 5 a seal layer between said separator layer and said distribution plate.
- 1 2. The multipart separator plate of claim 1 including an internal manifold in
- 2 said frame, said separator layer and said seal layer for delivering fluid and removing fluid
- 3 from said distributor plate.
- 1 3. The multipart separator plate of claim 1 in which said distributor plate
- 2 directs fluid flow to the membrane electrode assembly of the fuel cell.
- 1 4. The multipart separator plate of claim 2 in which said internal manifold
- 2 delivers and removes fuel gas and oxidant gas to the distributor plate.
- 1 5. The multipart separator plate of claim 2 in which distributor plate directs a
- 2 coolant fluid flow and said internal manifold delivers to and removes from said distributor
- 3 plate a coolant fluid.

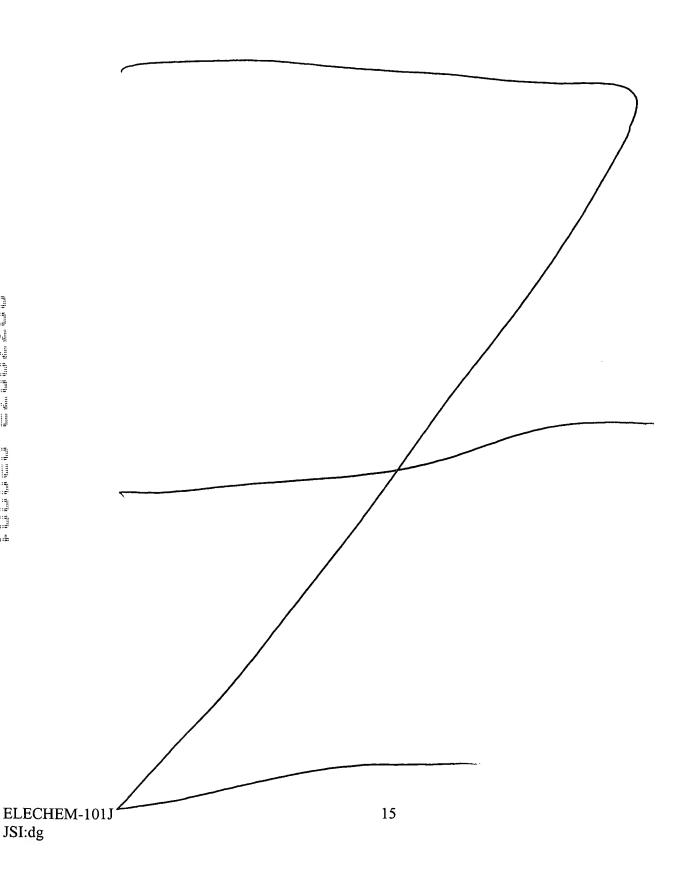
- 1 6. The multipart separator plate of claim 1 in which said frame is chemically
- 2 stable in the presence of the fuel cell fuel gas and oxidant gas.
- The multipart separator plate of claim 1 in which said frame is thermally
- 2 stable at fuel cell operating temperature.
- 1 8. The multipart separator plate of claim 1 in which said frame includes a
- 2 polymer.
- 1 9. The multipart separator plate of claim 1 in which said frame includes a
- 2 polycarbonate material.
- 1 10. The multipart separator plate of claim 1 in which said frame includes a
- 2 polyvinyl material.
- 1 11. The multipart separator plate of claim 1 in which said frame includes a
- 2 recess on its inner periphery for accommodating the periphery of the electrode of the
- 3 membrane electrode assembly.
- 1 12. The multipart separator plate of claim 1 in which said frame includes stops
- 2 for directing the fluid flow in said distributor plate.



- 2 electrically conductive.
- 1 14. The multipart separator plate of claim 1 in which said seal layer is
- 2 thermally and chemically stable.
- 1 15. The multipart separator plate of claim 1 in which said seal layer includes a
- 2 sheet of flexible graphite.
- 1 16. The multipart separator plate of claim 15 in which said seal layer includes
- 2 Union Carbide Grafoil®.
- 1 17. The multipart separator plate of claim 1 in which said fuel gas includes
- 2 hydrogen.
- 1 18. The multipart separator plate of claim 1 in which said fuel gas includes
- 2 methanol and reformate.
- 1 19. The multipart separator plate of claim 1 in which said separator layer
- 2 includes a metal.
- 1 20. The multipart separator plate of claim 1 in which said separator layer
- 2 includes stainless steel.

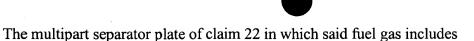
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2 includes porous graphite.



1	22.	A multipart separator plate for a fuel cell comprising:
2	•	a distributor plate for presenting a fuel gas to the membrane
3	B electrode assembly of a fuel cell;	
4		a frame surrounding said distributor plate;
5		an impervious separator layer; and
6		a seal layer between said separator layer and said distributor plate.
1	23.	The multipart separator plate of claim 22 including an internal manifold in
2	said frame, said separator layer and said seal layer for delivering fluid and removing fluid	
3	from said distributor plate.	
1	24.	The multipart separator plate of claim 22 in which said frame is chemically
2	2 stable in the presence of the fuel cell fuel gas and oxidant gas.	
1	25.	The multipart separator plate of claim 22 in which said frame is thermally
2	stable at fuel cell operating temperatures.	
1	26.	The multipart separator plate of claim 22 in which said frame includes a
2	polymer.	
1	27.	The multipart separator plate of claim 22 in which said frame is a
2	polycarbonate material	

- 1 28. The multipart separator plate of claim 22 in which said frame is a polyvinyl
- 2 material.
- 1 29. The multipart separator plate of claim 22 in which said frame includes a
- 2 recess on its inner periphery for accommodating the periphery of the electrode of the
- 3 membrane electrode assembly.
- 1 30. The multipart separator plate of claim 22 in which said frame includes stops
- 2 for directing the fluid flow in said distributor plate.
- 1 31. The multipart separator plate of claim 22 in which said seal layer is
- 2 electrically conductive.
- 1 32. The multipart separator plate of claim 22 in which said seal layer is
- 2 thermally and chemically stable.
- 1 33. The multipart separator plate of claim 22 in which said seal layer includes a
- 2 sheet of flexible graphite.
- 1 34. The multipart separator plate of claim 22 in which said seal layer includes
- 2 Union Carbide Grafoil®.



2 hydrogen.

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- 1 36. The multipart separator plate of claim 22 in which said fuel gas includes
- 2 methanol.
- 1 37. The multipart separator plate of claim 22 in which said separator layer
- 2 includes a metal.
- 1 38. The multipart separator plate of claim 22 in which said separator layer
- 2 includes stainless steel.
- 1 39. The multipart separator plate of claim 22 in which said distributor plate
- 2 includes porous graphite.





- 1 40. A multipart separator plate for an electrolyzer comprising:
- 2 a distributor plate for presenting water to the membrane electrode
- 3 assembly of the electrolyzer;
- 4 a frame surrounding said distributor plate;
- 5 an impervious separator layer; and
- 6 a seal layer between said separator layer and said distributor plate.